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Daniel S. Polley, Esq.
Malin, Haley & DiMaggio, P.A.
1936 South Andrews Avenue
Fort Lauderdale, FL 33316

EXAMINER	
FETZNER, TIFFANY A	
ART UNIT	**PAPER NUMBER**
2859	

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/074,826	GLEMAN, STUART M.	
	Examiner	Art Unit	
	Tiffany A Fetzner	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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	10/074,826	GLEMAN, STUART M.	
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DETAILED Final ACTION

Response to Arguments

1. Applicant's arguments with respect to **claims 1-39** from the November 17th 2003 response have been considered but are moot in view of the new ground(s) of rejection, necessitated by applicant's amendments to the claims, which have been made **final**.

Drawings

2. The objections to the drawings from the May 8th 2003 office action are rescinded in view of applicant's amendments to the specification and drawings, and the submission of corrected / new drawings of 11/17/2003 which have been approved by the examiner, concerning Figure content.

3. The examiner notes that the November 17th 2003 submitted drawings still fail to meet the requirements of the official draftsperson's Review form 948 that was enclosed with the last office action. New Formal drawings of the examiner approved November 17th 2003 drawing submission will be required if the application becomes allowable, prior to allowance/publication.

Specification

4. The objection to the abstract from the May 8th 2003 office action is rescinded, in view of the new abstract submitted with the November 17th 2003 amendment / response.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-7, 10-36** are rejected under **35 U.S.C. 102(b)** as being anticipated by **Guo et al.,** US patent 5,363,050 issued November 8th 1994, this rejection **is made final** as per applicant's amendments to the pending claims.

7. With respect to **Amended apparatus Claim 1**, and corresponding **Amended method claim 22**, **Guo et al.,** teaches "A radio-frequency" (i.e. using electromagnetic waves in the Hz., kHz., or MHz., microwave "imaging system" and "method" "for noninvasively imaging the internal structure of an object, person or animal" [See abstract, col. 1 lines 5-14, col. 1 lines 26-44; col. 1 lines 51-68; col. 3 lines 28-47; col. 3 lines 54-59] "comprising: means for generating a beam comprised of radio frequency signals," [See the microwave generator taught in col. 9 line 51 through col. 10 line 7, and figure 1] and "said signals having a particular wavelength, that is to be passed through said object;" [See col. 9 lines 53-62 where signals of a microwave wavelength shown as component 11 in figure 1a, are transmitted toward object/target 12].

8. **Guo et al.,** also teaches a "means for transmitting said beam toward said object," (i.e. transmitter antenna 10 shown in Figure 1a) "said means for transmitting said beam disposed at a first side of the object"; [See figure 1a] a "means for receiving non-re/deflected portions of (i.e. the examiner notes that scattered and absorbed signal portions constitute applicant's amended feature of non-re/deflected portions as in the **Guo et al.,** reference the microwave beams are partially absorbed/penetrating to the target, or object or patient or animal, with some beams passing through the object to the

opposite side of the object) "said beam after said non-re/deflected portions beam have passed through said object;" [detector / receiver array 13 shown in figure 1a and beam components 17] **Guo et al.,** shows and teaches a "means for generating one or more images of said object's internal structure based on received non-reflected portions of said beam;;" [See Figures 1b and 1a components 16, 20, 23, and 22, coaxial cables 14, and receiver array 13; col. 9 line 49 through col. 12 line 22 where the image formation process is explained in detail] "and" a "means for displaying said images of said object's internal structure". [See display device 24 in Figure 1b]].

9. With respect to **Amended apparatus Claim 2**, and corresponding **Amended method claim 23**, because a frequency sample is a finite amount of applied frequency, (i.e. a frequency pulse) **Guo et al.,** teaches that "said radio frequency signals are provided as a train of pulses" [See the technique of incident direction scanning col. 14 line 54 through col. 15 line 11, where data from eight frequency samples (i.e. eight frequency pulses applied linearly (i.e. as a pulse train) are shown in figure 6]. The same reasons for rejection, that apply to **claims 1, 22** also apply to **claims 2, 23** and need not be reiterated.

10. With respect to **Amended apparatus Claim 3**, and corresponding **Amended method claim 24**, **Guo et al.,** teaches that "said radio frequency signals are provided as a continuous wave." (i.e. a frequency sweep in the microwave bandwidth is a continuous wave of electromagnetic microwave energy across the frequencies of the microwave band.) [See col. 14 line 55 through col. 15 line 24, where the example of

sweeping the microwave frequency is taught.] The same reasons for rejection, that apply to **claims 1, 22** also apply to **claims 3, 24** and need not be reiterated.

11. With respect to **Amended apparatus Claim 4**, and corresponding **Amended method claim 25**, **Guo et al.,** teaches a "means for transmitting an additional beam towards said object at the same time said beam is transmitted" [See Figure 1a where more than 1 beam 11, is shown and col. 14 line 55 through col. 16 line 4, where **Guo et al.,** teaches using beams from opposite incident directions, and Figure 6 which shows that the two opposite sided beams were transmitted at the same time because each corresponding k-space ring, from the two incident direction is the same size.] **Guo et al.,** also teaches a "means for receiving a non-reflected (i.e. scattered) portion of said additional beam after said non-reflected portion of said additional beam has passed through the object;; [See col. 14 line 55 through col. 16 line 4; abstract; figures 1a, 1b, and 3 through 8] "wherein "said means for transmitting an additional beam is "situated proximate said object in order to obtain localized RF energy cross-beam information." [See col. 14 line 55 through col. 16 line 4; and Figure 7 which shows scattered (i.e. non-reflected) "cross-beam information" at measurement intersections of Figure 7.] The same reasons for rejection, that apply to **claims 1, 22** also apply to **claims 4, 25** and need not be reiterated.

12. With respect to **Amended apparatus Claim 5**, and corresponding **Amended method claim 26**, **Guo et al.,** teaches "said additional beam is comprised of radio frequency signals transmitted at a different frequency than a transmission frequency of the radio frequency signals of said beam." [See col. 14 line 55 through col. 16 line 4;

where **Guo et al.,** teaches combining frequency sweeping with opposite incident directions, therefore having different frequencies transmitted from the oppositely incident beams, is taught by the **Guo et al.,** reference.] The same reasons for rejection, that apply to **claims 1, 4, 22, 25** also apply to **claims 5, 26** and need not be reiterated.

13. With respect to **Amended apparatus Claim 6**, **Guo et al.,** shows from Figures 1a, 1b, and 2] that a " scanning means physically connected to said beam transmitting means and said beam receiving means for moving one or both in as a linear orientation proximate said object in order to measure said beam's attenuation and to create an X-Y planar scan of said object representing as a spatial position of said beam through said object." [See Figures 1a, 1b, 2, abstract, col. 10 line 38 through col. 12 line 22; col. 16 lines 22-24]. The same reasons for rejection, that apply to **claim 1,** also apply to **claim 6,** and need not be reiterated.

14. With respect to **Amended apparatus Claim 7**, **Guo et al.,** shows from Figures 1a, 1b, and 2] that a "scanning means physically connected to said beam transmitting means and said beam receiving means" [See Figure 1] " for moving one or both in as a rotational orientation about said object, and moves one or both along said object, in order to measure said beam's attenuation as a function of axial position and azimuth angle scan of said object representing attenuation of the beam as a function of a spatial position of said beam through said object." [See Figure 3,and in general figures 1a, 1b, 2, and 4-8, in connection with the teachings of col. 3 line 61 through col. 16 line 22, where the relationships of position and angle are explained in detail, an receiver array

13 is taught to be rotatable.] The same reasons for rejection, that apply to **claim 1,** also apply to **claim 7,** and need not be reiterated.

15. With respect to **Claim 10**, **Guo et al.,** teaches that said "signal transmitting means is as a horn antenna." [See col. 11 lines 38-58]. The same reasons for rejection, that apply to **claim 1,** also apply to **claim 10,** and need not be reiterated.

16. With respect to **Claim 11**, **Guo et al.,** teaches that said "said signal transmitting means is a waveguide having as a small aperture", because the scattered microwaves are coupled to a number waveguide-to-coaxial adapter feed elements, and the waveguides connect to the data acquisition interface (i.e. the receiver / multiplexer 16) with a cross section (i.e. an aperture that feeds / transmits the scattered microwaves to the receiver elements 16) of each waveguide on the order of a few millimeters, (i.e. the aperture of the waveguide elements which transmit the coupled scattered signals to the receiver / multiplexer 16) is "small". [See col. 10 lines 54-62] Additionally figure 1a of **Guo et al.,** also shows that the beams transmitted to the target 12 before scattering also originate from a "small aperture" due to the size of each of the four beams listed as component 11 shown. The same reasons for rejection, that apply to **claim 1,** also apply to **claim 11,** and need not be reiterated.

17. With respect to **Claim 12**, **Guo et al.,** teaches that the microwave radiation used is about 0.5-1Ghz which is a 1-50 millimeter wavelength range. Additionally, Figure 1a ,of **Guo et al.,** shows that the transmitted beams have "a width greater than the" 1 millimeter "wavelength of said radio frequency signals" therefore the limitation of said beam having "a width greater than the wavelength of said radio frequency signals" is

met by the **Guo et al.,** reference. [See Figure 1a, col. 10 line 46] The same reasons for rejection, that apply to **claim 1,** also apply to **claim 12,** and need not be reiterated.

18. With respect to **Claim 13**, **Guo et al.,** shows that "said signal beam is comprised of spherical wave fronts". [See figures 4, 5, 6, and 7] The same reasons for rejection, that apply to **claim 1,** also apply to **claim 13,** and need not be reiterated.

19. With respect to **corresponding amended apparatus claims 14** and **15** which depend from amended apparatus claims **1** and **5** respectively, and corresponding amended **method claims 29** and **30** which depend from amended method claims **22** and **26** respectively, **Guo et al.,** shows that "said beam receiving means are situated within a travel path for the non-reflected (i.e. the scattered) portion of the beam", [See figure 1a] Additionally, **Guo et al.,** teaches that "said beam receiving means" (i.e. receiver array 13 of Figure 1) "for measuring as a ratio of received signal power of the non-reflected portion passed through the object to transmitted signal power", because **Guo et al.,** teaches measuring the scattered distribution of dielectric permittivity of each cell in the receiver array 13, the examiner notes that the distribution of dielectric permitivity of each receiver array cell is a measured "ratio of received signal power of the non-reflected portion passed through the object to transmitted signal power for a particular receiver cell. [See col. 4 line 28 through col. 14 line 54; where **Guo et al.,** teaches all of the different scattered (i.e. non-reflected) measurements made, and the effects of scattering on image resolution.] The same reasons for rejection, that apply to **claims 1, 5, 22, 26,** also apply to **claims 14, 15, 29,** and **30,** and need not be reiterated.

20. With respect to **corresponding amended apparatus claims 16** and **17** which depend from amended apparatus claims **1** and **5** respectively, and corresponding **amended method claims 31** and **32** which depend from amended method claims **22** and **26** respectively, **Guo et al.,** teaches, and shows, that "one or more auxiliary detectors for receiving deflected portions of the beam, said one or more auxiliary detectors in communication with said means for generating said images, said auxiliary detectors situated at predetermined angles in relation to the path of said beam in order to gather additional information regarding RF energy scattered out of said beam." [See figures 1a, 1b, 2, and 3; col. 4 line 28 through col. 16 line 26.] The same reasons for rejection, that apply to **claims 1, 5, 22, 26,** also apply to **claims 16, 17, 31,** and **32,** and need not be reiterated.

21. With respect to **apparatus Claim 18**, and corresponding **method claim 33**, **Guo et al.,** teaches, and shows, "one or more auxiliary detectors is/are sensitive to a frequency caused by interaction of said beams with the internal structure or organs of said object". [See Figures 4, 5, 6, 7, 8, 1a, 1b, and 3; col. 1 line 5 through col. 16 line 26 as the detectors sensitivity to the scattered microwave frequency interaction resulting from a targets internal structure is a main consideration taught throughout the reference.] The same reasons for rejection, that apply to **claims 1, 5, 17, 22, 26, 32,** also apply to **claims 18,** and **33,** and need not be reiterated.

22. With respect to **apparatus Claim 19**, and corresponding **method claim 34**, **Guo et al.,** teaches, that "said object is as a live human or animal and said interaction of said beams produces as a therapeutic effect" (i.e. the detecting and discriminating of

abnormal from normal tissues in a living human patient, in advance of a biopsy (i.e. without having to remove tissue from a living patient to have the tissue tested) is a therapeutic effect because it tells the patient whether a biopsy, or surgery is necessary or just a false alarm.) The same reasons for rejection, that apply to **claims 1, 5, 17, 18, 22, 26, 32, 33,** also apply to **claims 19,** and **34,** and need not be reiterated.

23. With respect to **apparatus Claim 20**, and corresponding **method claim 35**, **Guo et al.,** teaches that "said beam receiving means further comprises an effective detector aperture less than or equal to one wavelength of the transmitted and received radio frequency signals" because **Guo et al.,** teaches a microwave frequency of 0.5-1 Ghz. (i.e. a wavelength of 1-50 millimeters) and that the cross section of coaxial feed / detector elements 14 is on the order of a few (i.e. 1-3) millimeters. The effective aperture of the coaxial cable detection components taught by **Guo et al.,** is on the order of a few millimeters (i.e. 1-3 millimeters) and 1-3 millimeters is "less than or equal to" the intrinsically taught wavelength range of 1-50 millimeters, therefore **apparatus Claim 20**, and corresponding **method claim 35**, are met by the teachings of the **Guo et al.,** reference. [See col. 10 lines 46-62] The same reasons for rejection, that apply to **claims 1, 5, 14, 22, 26, 29,** also apply to **claims 20,** and **35,** and need not be reiterated.

24. With respect to **Amended apparatus Claim 21**, **Guo et al.,** directly implies from the teaching that the microwave imaging system of the invention can be used to interrogate (i.e. security scan) luggage. [See col. 3 lines 54-59} that the invention is useful as a "security imaging system for noninvasively scanning people or objects" [See col. 3 lines 54-59] "comprising: a means for generating a beam comprised of radio

frequency signals," [See the microwave generator taught in col. 9 line 51 through col. 10 line 7, and figure 1] "said signals having a particular wavelength, with at least a portion of the signals passing through said person or said object;" [See Figure 1a, col. 9 lines 53-62 where signals of a microwave wavelength shown as component 11 in figure 1a, are transmitted toward object/target 12].

25. **Guo et al.,** also teaches a "means for transmitting said beam toward said person or said object," (i.e. transmitter antenna 10 shown in Figure 1a) a "means for receiving the portions of the signals of said beam that are passed through said person or said object;" [detector / receiver array 13 shown in figure 1a, in combination with the component beam 17 of figure 1a that passes through the object in a straight line to the other side.] **Guo et al.,** shows and teaches a "scanning means for moving said means for transmitting and means for receiving with respect to position" because receiving array 13 is a rotating array design that rotates around the object and therefore directly rotates the receiving means, and intrinsically rotates the position of the generated microwave beams to the target, object, patient, subject, or animal being scanned, with respect to position, during the rotation. [See col. 10 lines 48-53 in combination with figure 1a.] "means for generating one or more images of at least a portion of said person or said object's internal structure based on the portion of the signals received by said means for receiving: [See Figures 1b and 1a components 16, 20, 23, and 22, coaxial cables 14, and receiver array 13; col. 9 line 49 through col. 12 line 22 where the image formation process is explained in detail] "and" a "means for displaying said one or more images of said object's internal structure". [See display device 24 in Figure 1b].

26. With respect to **Amended Claim 27**, **Guo et al.,** teaches, and shows "the steps of measuring said beam's attenuation" (i.e. the beams scatter and permitivity distribution) and creating an X-Y planar or planar tomographic scan of said object representing as a spatial position of said beam through said object." [See Figures 3 through 8; col. 4 line 28 through col. 16 line 25]. The same reasons for rejection, that apply to **claim 22,** also apply to **claim 27,** and need not be reiterated.

27. With respect to **Claim 28**, **Guo et al.,** teaches, that "the steps of measuring said beam's attenuation to create an attenuation map", because **Guo et al.,** teaches, determining and making a map of the permitivity distribution based on the determined scatter matrix, which is a map of the transmission beam(s) attenuation since the entirely transmitted beam(s) does/do not pass through the object unaffected, and the permitivity distribution based on the determined scatter matrix, as taught by **Guo et al.,** accounts for all necessary variables, related to transmitted, scattered and absorbed microwave wavelengths. [See Figures 1a, 3 through 8; and col. 4 line 28 through col. 16 line 25]. The same reasons for rejection, that apply to **claim 22,** also apply to **claim 28,** and need not be reiterated.

28. With respect to **Amended Claim 36**, **Guo et al.,** teaches, "a system for noninvasively affecting, processing or interacting with internal structures, subsystems and / or components of an industrial object or system" [See abstract, col. 1 lines 5-14; col. 2 line 36 through col. 3 line 59] **Guo et al.,** also teaches, a "means for transmitting one or more scanned beams of radio frequency energy wherein each of said one or more beams is transmitted at a different frequency, than the other beams of said one or

more beams, wherein a non-reflected portion of each transmitted beam of said one or more beams is passed through the object or the system such that the radio frequency energies are delivered to as a volume of intersection of said beams", [See figure 1a, figures 4 through 8; col. 14 line 55 through col. 16 line 25] "wherein combinations of said frequencies interact specifically with said internal structures, said subsystems and/or said components to create as a desired effect." [See figure 1a, figures 4 through 8; col. 14 line 55 through col. 16 line 25, where the production of a useful three-dimensional image of the object as a result of the interacting / intersecting beams is a "desired effect", as well as the ability to use the image to determine if a biopsy is required, as per col. 2 lines 33-63]

Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

30. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

31. **Claims 8, 9,** and **37-39** are rejected under **35 U.S.C. 103(as a)** as being unpatentable over **Guo et al.,** US patent 5,363,050 issued November 8th 1994, this rejection **is made final** as per applicant's amendments to the pending claims.

32. With respect to **Claim 8**, **Guo et al.,** lacks directly teaching that "said "signal transmitting means is a parabolic reflector antenna." However, **Guo et al.,** teaches that the transmitting antenna or transmitter 10 may be a horn antenna, or an array antenna with a specification that provides a near-plane wave beam pattern. [See col. 16 lines 22-25] It would have been obvious to one of ordinary skill in the art at the time that the invention was made that because a horn antenna is a type of parabolic reflector antenna, this limitation is met by the teachings of the **Guo et al.,** reference. The same reasons for rejection, that apply to **claim 1,** also apply to **claim 8,** and need not be reiterated.

33. With respect to **Claim 9**, **Guo et al.,** lacks directly teaching that "said "signal transmitting means is a Cass grain antenna. However, **Guo et al.,** teaches that the transmitting antenna or transmitter 10 may be a horn antenna, or an array antenna with a specification that provides a near-plane wave beam pattern. [See col. 16 lines 22-25] It would have been obvious to one of ordinary skill in the art at the time that because the invention was made that because a Cass grain antenna intrinsically provides a near-plane wave beam pattern that this limitation is met by the teachings of the **Guo et al.,** reference. The same reasons for rejection, that apply to **claim 1,** also apply to **claim 9,** and need not be reiterated.

34. With respect to **apparatus Claim 37**, and corresponding **method claim 38** which depends from **apparatus claim 1** and **method claim 22** respectively, **Guo et al.,** teaches, and suggests as a "computer means" [See Figure 1b digital computer 20] "for comparing said generated images of said object with generic images (i.e. images stored earlier [See figure 1b components 21, 23, 22, which with components 20 and 24 produce images on display device 24 of figure 1b]) of said object, said generic images of said object stored in as a computer storage medium," [See Figure 1b components 21, 22, and 23; col. 9 line 67 through col. 10 line 21; col. 11 line 18 through col. 16 line 21; abstract]. **Guo et al.,** lacks directly teaching that "said means for comparing" (i.e. viewing on the display multiple images of the object obtained with the device) is used "to determine if said object is missing components, and if said object is as a human or animal, to determine if said object is missing an internal organ or has broken or damaged an internal organ", or that "said computer means capable of correcting said generated image to more closely match said stored actual image."

35. However, it would have been obvious to one of ordinary skill in the art, at the time that the invention was made to modify the teaching of **Guo et al.,** to include as a determination of the type of object, the lack or presence of features, and as a correction technique to align and enhance stored and current images because **Guo et al.,** specifically teaches that the device is useful in clinical, medical imaging modalities, [See col. 1 line 38 through col. 3 line 59; col. 1 lines 5-9] and conventionally, doctors desire to compare scans of patients prior to an accident or illness, or surgical procedure with scans taken after an injury, accident, surgical procedure, or illness to accurately

diagnose the problem/treatment for as a patient, or to determine how well as a patient (i.e. as a human or animal) is healing. Additionally, the step of "correcting said generated image to more closely match said stored actual image", is also conventionally well-known and highly desirable to medical physicians because this feature enables as a proper comparison, of the medical images obtained, especially if as a physician is attempting to compare diagnostic images of the same patient from the different imaging modalities of NMR, MRI, ultrasound, x-ray CT, and x-rays which are some of the modalities taught by **Guo et al.,** in col. 1 lines 11 through col. 3 line 59. The same reasons for rejection, that apply to **claims 1, 22,** also apply to **claims 37, 38,** and need not be reiterated.

36. With respect to **Claim 39**, **Guo et al.,** teaches software instructions stored in said computer storage medium, said software instructions to compensate for diffraction effects from the object." [See col. 13 line 54 equation 26; where **Guo et al.,** teaches that part of the calculations done by the system (i.e. digital computer) accounts for Fraunhoffer diffraction; and the teachings of col. 4 line 28 through col. 16 line 24 in general, which teach all of the processes and instructions performed by the hardware and software via digital computer component 20] . The examiner notes that unless otherwise stated conventional diagnostic imaging devices conventionally implement the procedural commands with specific software, therefore the presence of operational software to carry out the processed steps is considered to be an inherent aspect of any computer/processor device used to implement a given imaging procedure. Additionally, proper software with computer implementation is required in the diagnostic imaging arts

because without a computer/processor the conventional diagnostic imaging techniques would not be implementable, due to the amount of required numerical calculations involved, to produce a usable image. Diagnostic medical imaging is not performable mechanically by hand. The same reasons for rejection, that apply to **claims 1, 22, 37, 38,** also apply to **claim 39,** and need not be reiterated.

37. The **prior art made of record** and not relied upon is considered pertinent to applicant's disclosure.

A) **Bridges** US patent 5,704,355 issued January 6th 1998 which teaches a non-invasive device for breast cancer detection using scattered radio frequency to make a three-dimensional image.

B) **Bridges** US patent 5,807,257 issued September 15th 1998 which teaches a non-invasive device for breast cancer detection using scattered radio frequency millimeter waves, to make a three-dimensional image.

C) **Perelman et al.,** US patent 5,919,140 issued July 6th 1999 which teaches optical imaging using scattered light to determine images of internal body structures for diagnostic imaging.

D) **Perelman et al.,** US patent 6,321,111 B1 issued November 20th 2001, filed July 2nd 1999 which also teaches optical imaging using scattered light to determine images of internal body structures for diagnostic imaging. It is a continuation of **Perelman et al.,** US patent 5,919,140.

E) **McMakin et al.**, US patent 6,507,309 B2 issued January 14th 2003, filed March 16th 2001 which teaches a device for security scanning a person or object in three-dimensions via radio frequency emissions.

F) **McMakin et al.**, US patent 6,703,964 B2 issued March 9th 2004, filed November 21st 2002 which teaches a device for security scanning a person or object in three-dimensions via radio frequency emissions. It is a continuation of **McMakin et al.**, US patent 6,507,309 B2

G) **Johnson et al.**, US patent 6,005,916 issued December 21st 1999. This reference is 206 pages in length. The entire reference is applicable, there are hundreds of mathematical formulas. This is a reference which explains why imaging with scattering for diagnostic imaging works.

H) **Murphy** US patent 5,227,797.issued July 13th 1993.

I) **Murphy** US patent 5,030,956 issued July 9th 1991, which is the parent application to the reference applied in this office action.

J) **Schaefer et al.**, US patent 4,712,560.

38. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

39. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Fetzner whose telephone number is: (571) 272-2241. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm., and on alternate Friday's from 7:00am to 3:30pm.

41. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached at (571) 272-2245. The **only official fax phone number** for the organization where this application or proceeding is assigned is **(703) 872-9306**.

TAF
March 21, 2004

Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800